Exhibit B'
(with daks)

GE Patent Disclosure Letter System

DOCKET NUMBER

29915

DOCKET DATE

Monday, November 19, 2001

TITLE OF INVENTION

Continuous Prediction, Monitoring, and Control of
Compressor Health via Detection of Precursors to Rotating
Stall and Surge using Kalman Filter Based Post-Processing
on Frequency Demodulation of Acoustic Signatures

GE TECHNOLOGY AREA(S)

- GE Aircraft Engines

Keywords:

 o Fan Compressor (13 DA)

 o Controls/Diagnostic (13 DS)

- GE Power Systems

Keywords:

 o Gas Turbine Engineering 51 DV

PROJECT NAME

Stall Precursor Detection

PROJECT NUMBER

212778-1001

PROJECT LEADER

Krok, Michael J

BUSINESS OR ORG. CONTACT INFORMATION

NAME Steven M. Schirle

PHONE NUMBER ▆▆▆▆▆

Was this invention first conceived or reduced to practice in the performance of work under a contract between GE and another non-government third party? NO

Date Invention Conceived : January 25, 2001

Circumstances Invention Conceived i.e., described in patent notebook (include page #), technical report, letter, discussed in meeting minutes, etc.
Conceived during execution of Stall Precursor Detection project as a result of collaboration between efforts at CRD-Niskayuna and CRD-Bangalore.

Was this invention first conceived or reduced to practice in the performance of work under a US Government contract? NO

ABSTRACT OF THE INVENTION
Please write a brief explanation of the invention (Limit to 350 words)

This letter discloses the invention of a method to continuously monitor the health of an axial compressor in a gas turbine via the detection of precursors to rotating stall and surge using a technique that performs frequency demodulation followed by post-processing using a Kalman filter. Specifically, the method entails real-time monitoring of one or more dominant frequencies in the acoustic spectrum, as measured by dynamic pressure, velocity, force, or vibration sensors. Abnormal variations in these monitored frequencies are flagged by post processing through a Kalman filter and correlated to the underlying compressor operating parameters. The level and detailed nature of frequency variation for a baseline compressor is known a priori, as a function of the underlying compressor operating parameters, which provides a basis of comparison for inferring the health of the compressor of interest. Based on this health indication, a real-time control system issues necessary actions to protect the machine.

BACKGROUND OF THE INVENTION

Please describe the problem or requirement addressed by your invention.
(see attachment)

How has this problem or requirement been addressed before?
(see attachment)

Is this disclosure letter related to any GE disclosure letters, patent applications or issued patents?

YES
GEPS Dockets: - Compressor Control and Operation in Industrial Gas Turbines Using Stall Precursors - Continuous Prediction, Monitoring, and Control of Compressor Health via Detection of Precursors to Rotating Stall and Surge using Temporal Fast Fourier Transform and Correlation to Compressor Operating Parameters - Continuous Prediction, Monitoring, and Control of Compressor Health via Detection of Precursors to Rotating Stall and Surge using Frequency Demodulation of Acoustic Signatures - Continuous Prediction, Monitoring, and Control of Compressor Health via Detection of Precursors to Rotating Stall and Surge using a Kalman Filter based computation that uses measurements of compressor operating parameters as inputs - Continuous Prediction, Monitoring, and Control of Compressor Health via Detection of Precursors to Rotating Stall and Surge using Correlation Integral and Statistical Process Control and Correlation to Compressor Operating Parameters

Have you completed a prior art search? NO

Please list any relevant literature or patents of which you are aware.

DETAILED DESCRIPTION OF THE INVENTION
How does your invention work?
(see attachment)

Describe the important features of your invention and explain how to use the invention to solve the problems described above.
(see attachment)

What advantages are provided by your invention?
(see attachment)

Has your invention been reduced to practice? YES
Date: May 2001

Briefly describe any efforts to make a prototype of your invention or to test your invention. Additionally, summarize the results of any related experiments and testing and highlight any results of particular significance.
Algorithm was included among several that were tested during October 2001 FSNL of the 7FB turbine in Greenville, SC.

BRIEF DESCRIPTION OF THE DRAWINGS
Please describe the significance of any pictures, drawings, graphs, diagrams, structures or figures and the type of picture along with the specific view or application to the invention.
(see attachment)

CLAIMED INVENTION
Please identify novel aspects that should be protected within this disclosure letter.
(see attachment)